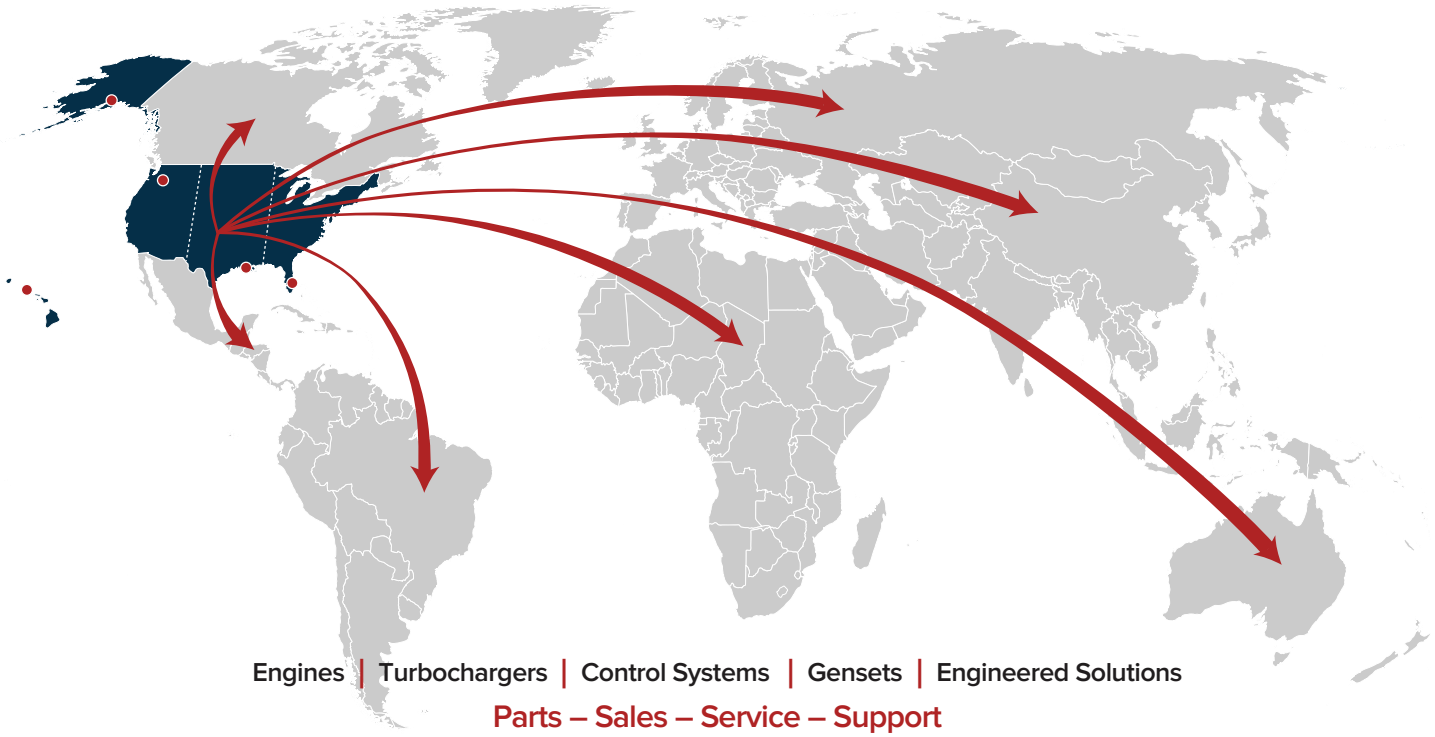


Marine Capabilities

MSHS
Pacific Power Group
An Industrial Service Solutions® Company

mshs.pacificpowergroup.com

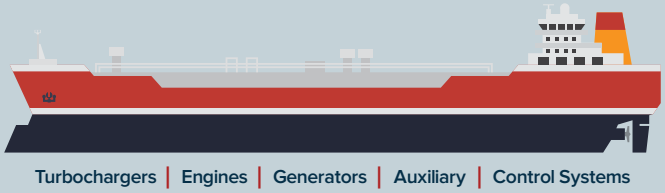
Agility | Safety | Expertise | Reliability



Engines | Turbochargers | Control Systems | Gensets | Engineered Solutions

Parts – Sales – Service – Support

The Big Picture – Marine, Coastal & Inland Waterways



Turbochargers | Engines | Generators | Auxiliary | Control Systems



MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), specializes in designing, selling, and serving power and propulsion solutions in the marine, power generation, and defense sectors.

Why We Do It

To build enduring partnerships that Power & Propel the world forward.

With full-service workshops in Alaska, California, Florida, Hawaii, Louisiana, and Washington, MSHS PPG ISS technicians and engineers specialize in propulsion and power generation solutions for all types of prime movers (gas, diesel, and dual-fuel engines, steam, gas, and hydro turbines), highspeed. medium speed engines, and power generation applications. With over 60 years of experience, MSHS PPG ISS has developed solutions to ensure your engines and systems operate at peak efficiency.

From planning to completion and beyond, MSHS PPG ISS is your trusted partner for 24/7 global professional support and unparalleled service for all types of vessel applications – **Power & Propel!**

Marine High / Medium Speed 4-Stroke Engine Services And Support



MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), understands how important efficient vessel operation time is. MSHS PPG ISS's maintenance and repair services for marine High and Medium Speed 4-Stroke engines allow vessels to operate at peak performance. MSHS PPG ISS's service teams are trusted partners for global operators who rely on technical expertise and state-of-the-art technology to keep their businesses moving forward. Discover how MSHS PPG ISS can be the right MRO partner for you.

OEM engine brands we service

- Bergen Engines*
- CAT
- Cummins
- Daihatsu*
- Detroit Diesel
- Deutz/MWM
- Doosan/MAN
- FPT*
- Fairbanks Morse GE
- *Authorized
- GMT
- Hyundai HiMSEN MaK
- MAN/STX
- mtu
- S.E.M.T. Pielstick
- Stork Werkspoor
- Volvo Penta
- Wartsila
- Yanmar

Machining Services

- Broken Stud Removal
- Flange Facing
- Line Boring
- Liner Honing
- Ridge Wear Removal

Sales, Maintenance & Repair Services

- Charge air coolers
- Component exchange and swing sets
- Component overhaul and repair (piston/liners, conrods, safety valves)
- Coupling alignment
- Crankshaft deflection measurements and assessments
- Cylinder head and liner measurement and reconditioning
- Electric motor/generator repairs
- Field service
- Filtration/separation and fluid management
- Fuel injection
- Fuel measuring and monitoring
- Gearboxes
- Major engine overhauls
- Oil system flushing
- Performance assessments
- Rental of engine service specialty tools
- Replacement, block exchange, and crankshaft exchange
- Retrofits
- Rubber and steel expansion joints
- Turbochargers: KBB, Napier,Hedemora, MET, Mitsui, ABB/Accelleron, MAN, PBS, and CAT.

Standard Services

- Component rebuild and Polyflake application
- Corrective, preventive, and predictive maintenance
- Emergency vessel down mobilizations
- Testing, troubleshooting and fault finding
- Operating data analysis & report
- Installation & Commissioning
- Borescope inspection
- Technical advisory
- Specialty repairs
- 24/7 support

Marine High Speed 4-Stroke Engine

Services And Support



MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), understands how important efficient vessel operation time is. MSHS PPG ISS's maintenance and repair services for marine High and Medium Speed 4-Stroke engines allow vessels to operate at peak performance. MSHS PPG ISS's service teams are trusted partners for global operators who rely on technical expertise and state-of-the-art technology to keep their businesses moving forward. Discover how MSHS PPG ISS can be the right MRO partner for you.

Specialty Services

- Field service calls 24/7/365 and in-field service
- Engine surveys: sea trials, load profile, error log files
- Engine maintenance and sub-assemblies built in-house
- Dyno testing: up to 4500 BHP and up to 1000 GPM for raw water-cooled engines
- Engine electronics vessel controls: install, troubleshoot, adjust, commission, and training
- Marine hybrid solutions
- Marine reduction gears
- Major engine overhauls
- Application engineering
- Marine coupling &shafting solutions
- Emergency parts & service 24/7

Standard Services

- Component rebuild and Polyflake application
- Corrective, preventive, and predictive maintenance
- Emergency vessel down mobilizations
- Testing, troubleshooting and fault finding
- Operating data analysis & report
- Installation & Commissioning
- Borescope inspection
- Technical advisory
- Specialty repairs

MSHS PPG ISS Is The OEM Authorized Distributor And Dealer For:

mtu A Rolls-Royce solution

VOLVO PENTA

DETROIT DIESEL

YANMAR

FPT POWERTRAIN TECHNOLOGIES

MSHS PPG ISS Technicians are trained and experienced in all leading engine brands

Turbochargers

Solutions - Support - Service - Parts - Sales



Marine, Coastal & Inland Waterways



Power Generation Commercial & Industrial

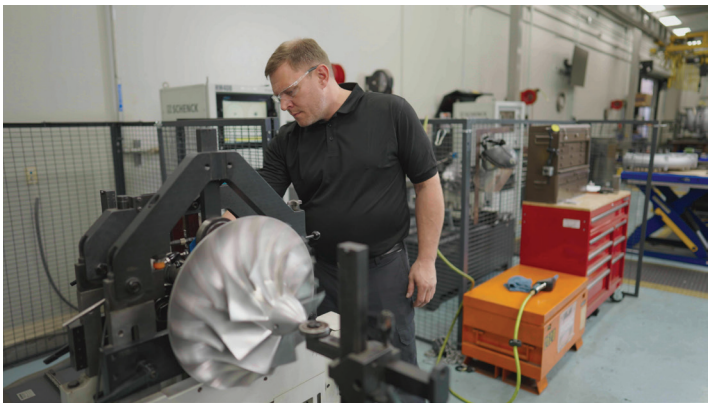


Defense & Government

MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), delivers fast, reliable service, reconditioning, new units, and spare parts for leading turbocharger brands including NAPIER, MET, KBB, Hedemora, ABB/Accelleron, PBS, CAT, and MAN. With authorized service centers in Florida, Louisiana, Washington, Alaska, and the Bahamas, our in-house and field technicians provide 24/7 support you can count on.

MSHS PPG ISS Advantage

- Customized Solutions
- Highly-Trained Technicians
- State-of-the-Art Service Centers
- Dedicated Spare Parts Support Team
- 24/7 Emergency Workshop & Field Support
- Long-Term Service Agreements
- Multi-Brand Competent Support
- In-stock OEM Spare Parts Inventory
- ISO 9001:2015, Lloyds Register Quality Assurance
- NDT Quality Control with Level 3 Certified Backup Service





Turbocharger Services:

- Scheduled/Custom Maintenance
- Workshop and Worldwide Field Service
- Performance Analysis
- Root Cause Analysis Troubleshooting
- Rotor/Shaft Dynamic Balancing
- Re-blading with New or Reconditioned Turbine Blades
- Turbocharger Components and Turbine Blades
- Reconditioning

Authorized Service and Parts:

Napier TURBOCHARGERS

KBB

METurbo MITSUBISHI HEAVY INDUSTRIES, LTD.

MITSUI E&S

HEDEMORA TURBO & DIESEL

Turbocharger Retrofit Solutions

At 30,000 RPM, Choose a Reliable Partner

MSHS PPG ISS Turbo Retrofit program offers customers modernization and lifetime extensions for their vessel and/or power generating plants. Capable of delivering superior performance, our turbo retrofits replace existing supercharging with the most advanced turbocharger technology, adding value for operations through:

Reap the Benefits:

- **Significant fuel savings** — ROI in 1.5 to 3 years, depending on engine usage and fuel type.
- **Lower exhaust temperatures** — helping improve engine efficiency and reliability.
- **Extended overhaul intervals** — more uptime, less maintenance.
- **Reliable spare parts availability** — reducing delays and downtime.
- **Environmentally friendly** — reduced emissions and improved efficiency.

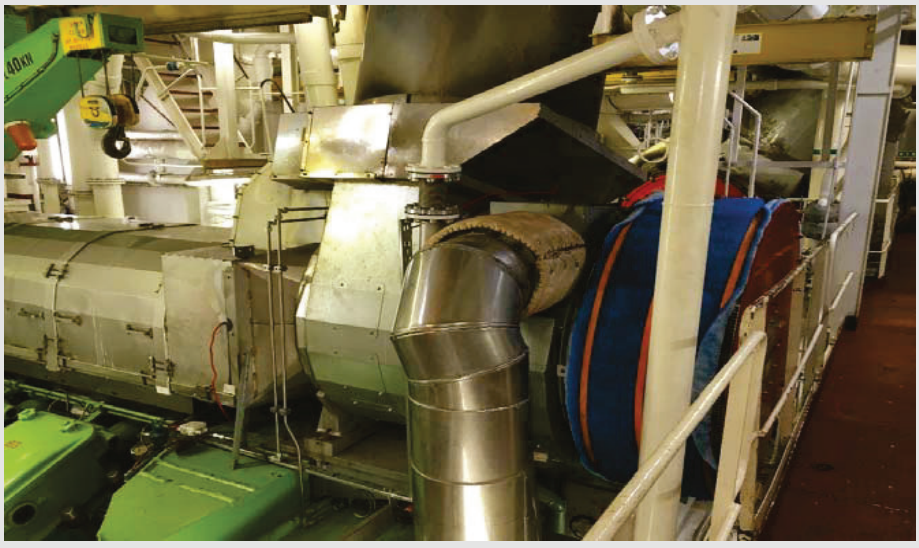
LRQA CERTIFIED ISO 9001

Turbo Retrofit Experts:

- Napier
- KBB
- Hedemora
- MET-Mitsubishi
- Mitsui
- ABB/Accelleron
- Caterpillar
- MAN
- PBS



Before: 2x VTR354 Turbochargers



Controls Systems & Engineering





For over 30 years, MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), has delivered safe, reliable, and efficient Control System Upgrades and retrofits, custom-built and fully integrated to our customers' needs. Our expert technicians and engineers provide complete through our workshops or on-site anywhere in the world.

Control Systems

- Engine & Generator Alarm, Control, and Monitoring Systems.
- Steam, Hydro & Gas Turbine Controls.
- Predictive Engine Monitoring.
- HMI/Operator Control Panel and PLC for Engines & Turbines.
- Hydromechanical & Electronic Governors.
- Fuel Measuring Systems.
- Protection Relays.
- Excitation Systems.
- Automatic Voltage Regulators (AVR).
- Variable Frequency Drives (VFD).
- Automatic & Manual Transfer Switches
- Pneumatic Actuators.
- Oil-Mist Detectors.

OEM brands we support

- Woodward*
- Horner Automation*
- ioCurrents*
- SEG Electronics*
- Auto-Maskin*
- Boning*
- KRAL*
- ABB*
- Schaller*
- Yanmar*
- Regulateurs Europa*
- Barksdale/Dynalco*
- Diesel Kiki
- Basler
- Valtek
- DCL

**OEM Aligned*

OEM brands we support

- Integrated and custom power and propulsion management system design and installation
- Commissioning of engineered solutions
- Design and manufacturing of custom-made specialized tools and components for service tasks
- Engineered solutions based on SolidWorks
- Fuel, oil, water, and air management system design and installation
- Engineered adapter kits
- Engineering of custom-made solutions for OSM repairs
- Compliance inspection service
- Long-term and planned maintenance & support contracts
- Mechanical engineering
- On-site 3D scanning and digitization
- Design and installation of integrated and custom exhaust systems for engines
- Monitoring system design and installation
- Project management

MSHS PPG ISS ensures power and propulsion systems operate at peak efficiency through enduring partnerships that power & propel the world forward.

Sales And Service

- Governors & Actuators
- Electronic Controllers
- Oil Mist Detectors,
- Automatic Voltage Regulators
- Generator Controls



Exchanges available for most diesel/gas engines and steam turbine applications.

Remanufactured units are often available sooner than new factory governors. Purchase a remanufactured governor as your replacement or spare.

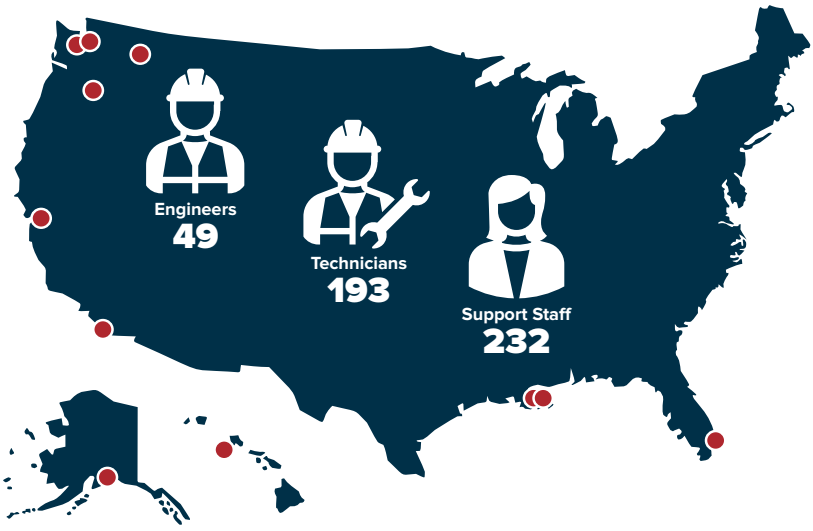
Warranty same as a new unit. A one-year warranty is included with all remanufactured and exchanged units.

Installation is available worldwide on-site by our factory-trained expert technicians.

Field Service technicians available for troubleshooting, repair, tuning, and system optimization.

Workshops strategically placed throughout the U.S. for repair, overhaul, bench testing, and calibration.

Our Reach & Team



Parts & Consumables

>650K

We carry on average over 650.000 parts/ components and consumables in inventory. Depending on the need we can source all types of parts to get the job done.

- Original Equipment Manufacturer (OEM)
- Original Equipment (OE)
- OE Quality Replacement
- Remanufactured
- Discontinued

Our large parts inventory and relationships put us above others when it comes to lead times.

Woodward Marine Capabilities

WOODWARD
Business Partner



A Partnership with a Great Past and Even Greater Future

As the largest authorized Woodward channel partner, the MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), sales, service, and engineering teams are recognized as Woodward governor and controls system specialists. With experience and recognition comes special access to core software that you cannot get with just any partner. Our access to Woodward and an extensive parts and products inventory ensures MSHS PPG ISS ISS delivers unmatched service and delivery.

Woodward has a wide range of control system products that are ABS, Lloyd's Register, DNV-GL, and Coast Guard approved, guaranteeing unmatched efficiency, reliability, and safety for all maritime operations.

Speed control systems

Designed to regulate the speed and performance of engines.

Engine control systems

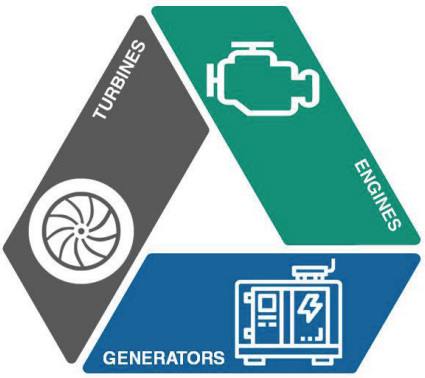
Manages marine propulsion engines, ensuring they operate at optimal performance and fuel efficiency.

Distributed control systems

Integrated distributed control systems for ship systems monitoring and control.

Automated control systems

Efficiently manage generation and distribution of power on vessels ensuring a seamless and reliable power supply.



Governors & actuators

Used on marine diesel engines to regulate speed and maintain stability across various vessel operating conditions.

Hydraulic valve actuators

Used for controlling valves and for actuation purposes in critical applications.

Electro-hydraulic control systems

Designed to perform various functions in a vessel's hydraulic control systems, ensuring optimal performance and safety.

These systems ensure efficient operation, precise control, and safety measures, making them critical for various marine applications depending on the vessel's size, propulsion system, power generation requirements, and other technical specifications.

Governor Sales & Exchange Program



Marine, Coastal & Inland Waterways



Power Generation Commercial & Industrial



Defense & Government

Save Money, Minimize Downtime & Improve Efficiency

With thousands of governors available, take advantage of the largest governor inventory in North America. If you need it, we have it.

- MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), is one of the largest **Authorized Woodward** service and repair partners for mechanical governors and electric actuators assuring quality service every time.
- **Exchanges** are available for most diesel/gas engines and steam turbine applications. See back for details.
- **Minimize downtime** with an exchange unit we can ship to you for a quick swap. Afterward, return the original governor for core credit.

MSHS PPG ISS's factory-trained field service technicians travel worldwide to provide on-site installation.



Remanufactured (outright sale)

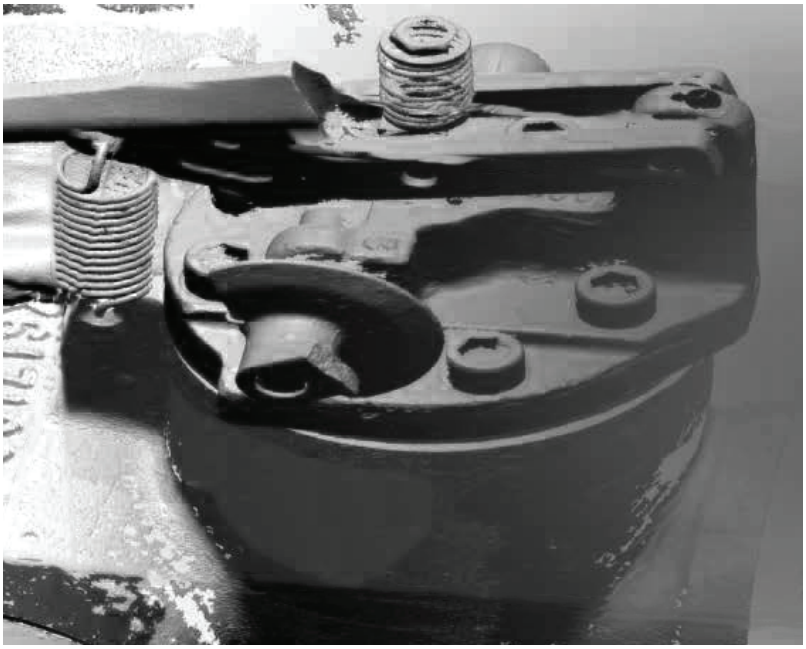
Remanufactured units are often available sooner than new factory governors. Purchase a Woodward-Authorized remanufactured governor as your replacement or spare.
*Outright Sales do not require a core return.

WARRANTY

Same as new – One year warranty is included with all remanufactured/exchanged units.

On-Site 3D Scanning and Digitization

Computer Aided Mechanical Design Solutions



Unavailable parts and hard to find components are not an issue for MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), engineers. Utilizing an on-site, 3D Scanning and Digitization solution, MSHS PPG ISS engineers can quickly and efficiently generate precise (using up to 3 million touch points) 3D turbine/engine parts and components CAD models. The results are 3D raw data assets used in Solid Works ready designs that engineering teams can use to recreate parts and components for accurate design specifications.

The process is fast and efficient. Once the reference point monikers are positioned, the 3D scan quickly converts the object so a comparison between the scan and original model can be made. This comparison is used to identify inconsistencies that parlay into corrective actions regarding wear, defects, warping, and twisting.

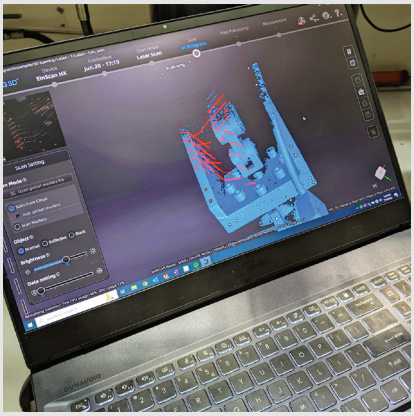
Existing or damaged parts can be scanned to create functional CAD models and drawings of legacy parts or equipment with insufficient documentation enabling technical teams to reverse engineer or redesign system-critical components ensuring efficient and timely project completion.

BENEFITS:

- Save design time by quickly capturing detailed specs and measurements
- Re-create legacy, hard to find, and discontinued parts
- Compare “as-designed” models to “as-built” condition
- Convert to Computer Aided Design (CAD) programs
- Computer aided retrofit solutions



Measurements can be taken on running machinery/equipment



Instant data acquisition: up to 0.04 mm accuracy

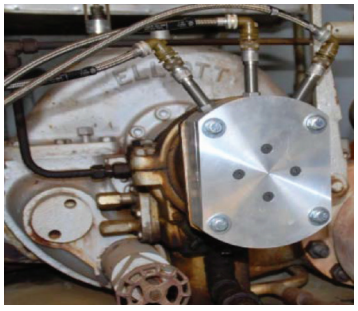
Control System And Auxiliary Equipment Health Review Proactive Service/Support Analysis

Keep in mind... preventative action is cheaper than corrective maintenance



MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), Control System and Auxiliary Equipment Health Reviews, your teams can tackle potential problems and make informed decisions keeping your Control, Governor, Monitoring, and Actuation systems running at optimum performance. Designed to arm existing teams with better decision-making information, MSHS PPG ISS experienced engineers and technicians are control system experts trained by leading manufacturers and supported by state-of- the-art facilities across the United States. Whether you have an independent paper mill or a network of power plants, MSHS PPG ISS will save you time and money!






Benefits:

- Less Downtime / Cost Savings
- Part & Serial Numbers Documentation
- Control Setting File Recording
- Correct Immediate Repairs
- Excessive Wear Inspection
- Performance Optimization
- Personnel Training
- Spare Part Cataloging
- Future Service Reporting
- Obsolete Equipment Upgrade/Referral

Designed For:

- Diesel/Natural Gas Power Plants
- Petrochemical & Oil Refineries
- Wastewater Pumping Stations
- Pulp & Paper Mills
- Compressor Stations
- Steam Turbine Applications

MSHS PPG ISS engineers perform control system health check to identify potential problems before they cause costly downtime.

Why MSHS PPG ISS health check



After a comprehensive control system review, a detailed inspection report of the governor and auxiliary equipment usage, settings, and linkage is provided.



MSHS PPG ISS governor experts will recommend service and replacement options ensuring your system continues running at Optimum Performance.



Identify potential problems and system health issues BEFORE they cause lengthy downtime and costly repairs.

What you can expect from a Control System Health Check

- Governor and auxiliary equipment part and serial number documentation
- On-site internal component inspection resolving immediate repair needs
- Governor linkage and pin wear inspection and reporting
- Tune governor dynamics for optimal performance and parameter documentation
- Train personnel on proper Governor System setup and installation
- On-site support addressing immediate control system concerns
- Provide a recommended spare part Bill of Material
- Provide recommended upgrades for obsolete or discontinued equipment
- Deliver a complete service report for immediate, or future recommended services

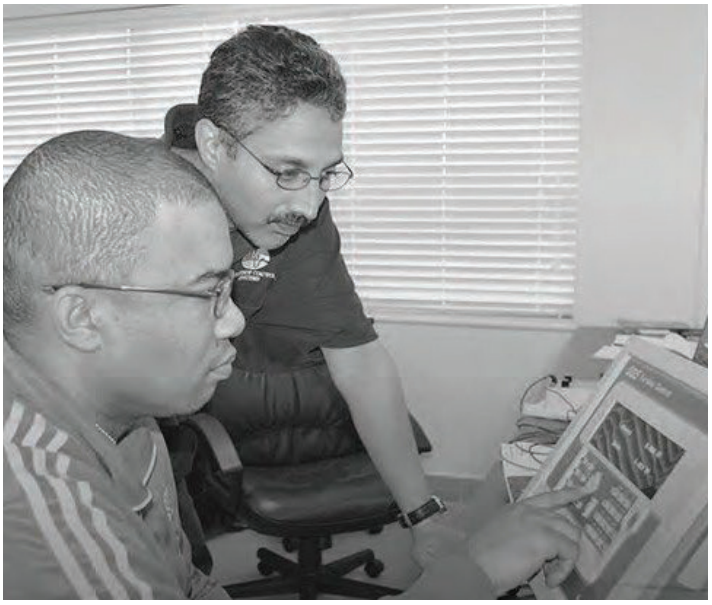
MSHS PPG ISS is one of the largest Woodward Channel Partners and is authorized and trained by the following partners:

GCS Basler FLOWSERVE GERHARDT

WOODWARD Business Partner

Contact an MSHS PPG ISS Control System expert to learn more and find out about special pricing and discounts.

Class description - Hands-On Training



WOODWARD
Business Partner

Who Should Attend

Trained personnel can protect your critical operations. If you work with Woodward Industrial mechanical governors or electronic controls systems as a plant or vessel supervisor, instrumentation and electrical (I&E) engineer, maintenance operations, or an applications engineer, these courses will sharpen troubleshooting skills to increase efficiencies and uptime.

2301A / E Load Sharing and Speed Control

Class # IPCS009
3 Days

Learn the operation, installation, and adjustments of 2301A (Analog) and the 2301D or E (Digital) Load Sharing Speed Control. Understand how the 2301A and 2301D or E control, actuators, and their associated accessories allow their engines to operate together, either on or off the infinite bus (utility). Hardware and software configuration/ monitoring will be explained and connected to a loop test set.

723 PLUS Digital Speed Control

Class # LE001
3 days

Woodward 723 PLUS control is a configurable control for prime movers. Both the hardware and software will be covered in class. During the course, the control will be programmed and monitored with Woodward Watch Window and a hand-held programmer. The control will be operated using a closed-loop test set to simulate an engine.

Peak 150 Digital Steam Turbine Control

Class # TC010
2 days

Woodward Peak 150 digital steam turbine controls are used in mechanical drive applications. Hardware, software, and programming will be demonstrated; through a closed-loop test set. Learn how the Peak 150 control, actuators, and their associated accessories allow turbines to operate together, either on or off the infinite bus (utility) or operating a mechanical drive.

DSLC-2 and MSLC-2 Synchronizer & Load Control

Class # IPCS001
2 days

Learn more about the basics of power management. This course will focus on the Woodward DSLC-2 & MSLC-2 controls including theory, installation, operation, and maintenance plus hands-on programming, adjustments, and troubleshooting techniques.

ProTech TPS, GII, and SX Overspeed Safety Systems

Class # TC011
2 days

Woodward ProTech GII, TPS, and SX are speed Safety Devices for steam turbines. This class is designed to explain the operation, theory, installation, programming, and maintenance. The hands-on portion will include programming, adjustments, and troubleshooting techniques.

505XT Digital Steam Turbine Control

Class # TCS009
3 days

Review Woodward digital steam turbine control theory and turbine parameters, installation, wiring, operating procedures, programming, and troubleshooting. The hands- on portion includes programming, adjustments, and troubleshooting techniques on the 505 connected to the simulator with specifically designed examples. Operate the control within a closed-loop test set.

easYgen 3000XT Power Management Control

Class # IPC007
3 days

The course covers theory, installation, programming, operation, and maintenance of the easYgen 3000 control systems using actual controls. Hands-on training includes time for programming, adjustments, and troubleshooting techniques.

EGCP-3 Power Management Genset Control

Send Request

This class will begin with an introduction to the basics of power management. The installation, programming, troubleshooting, and operation of the EGCP-3 will be covered, and class members will gain hands-on experience in programming the control.

UG-8 / UG-40 Mechanical Governor

Send Request

This class will give you the opportunity to learn about the UG governor. In this class, you will learn the theory, installation, operation, and maintenance of the governor. Calibration and troubleshooting by using the test stand.

PG Mechanical Governor Basics (PGA, PG-PL, PGG)

Send Request

This class will give you the opportunity to learn about PG mechanical governor and learn the theory, installation, operation, and maintenance of the governor. Calibration and troubleshooting were done using the test stand.

WOODWARD

For more information and our training schedule visit: **mshs.com/training-classes**

Cancellations must be in writing. No charge for cancellations received four weeks before the first day of class. Cancellations within the four weeks, 25% of the cost of the class; cancellation charge within three weeks, 50% of the cost of the class is charged; within two weeks, 75% of the cost of the class is charged; within one week, 100% of the cost of the class is charged.

No-shows will be charged 100% of the cost of the class. Names may be substituted at no additional charge. Please notify the Training Coordinator if the name of the class attendee changes. **training@mshs.com**

***Charges will not be applied until week of training. A paid receipt will be sent at that time.**

Fuel Consumption Measurement For Diesel Engines



KRAL Flowmeters

Fuel consumption dominates operating costs. KRAL Fuel Consumption Measurement Systems measure the actual flow of fuel in the fuel line. KRAL flowmeters are the most precise positive displacement meters available.

Engine efficiency management

Engineers use the fuel consumption value as an indicator of optimum engine tuning. Barge operators report that the system pays for itself in less than a year.

Extremely accurate, real time Measurement (+/-0.12%)

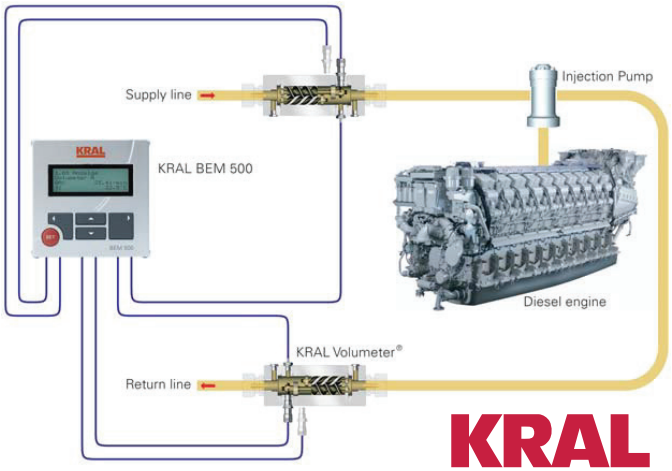
View the KRAL fuel display and reduce engine speed until the speed display responds.

Factory calibrated for accurate readings

7 point linearization over full flow of meter. Compact design - 2 Flow Meters + 1 BEM electronic display and data storage.

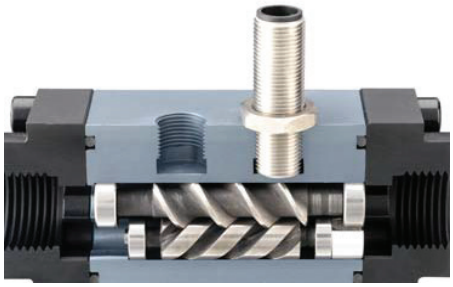
Emissions Control Air Permit Reporting

Document fuel usage: measure hours or fuel consumption.



Fuel Consumption Measurement (FCM) System

The system is comprised of 2 KRAL positive displacement flow meters (Volumeters) and a BEM 500 electronic unit. Temperature differences between the forward and return fuel flows are taken into account to provide a more accurate reading.



Advanced fuel consumption monitoring and diagnostic system for engine efficiency management.

A Volumeter is a linear positive displacement meter. It divides a fluid into countable quantities and totalizes those quantities using speed sensors and the BEM electronic units.

The KRAL Volumeter is a very compact positive displacement meter that measures the flow of liquids. The measurement chamber consists of the casing and two screw spindles. The spindles continuously divide the liquid in a precision made closed measuring chamber - nothing escapes. The precisely measured value is calculated from the known measuring chamber volume and the spindle rotation speed.



- Real time measurement, idle to full load
- Factory Calibrated
- Extremely accurate (+/- 0.12%)
- Compact design, robust cast iron cases; steel nitrated spindles
- All major marine certifications.
- Available in six (6) design sizes, engine sizes 300 kW and up

Optional:

- BEM 800 Electronic Units display flow values for up to 16 engines
- External bypass

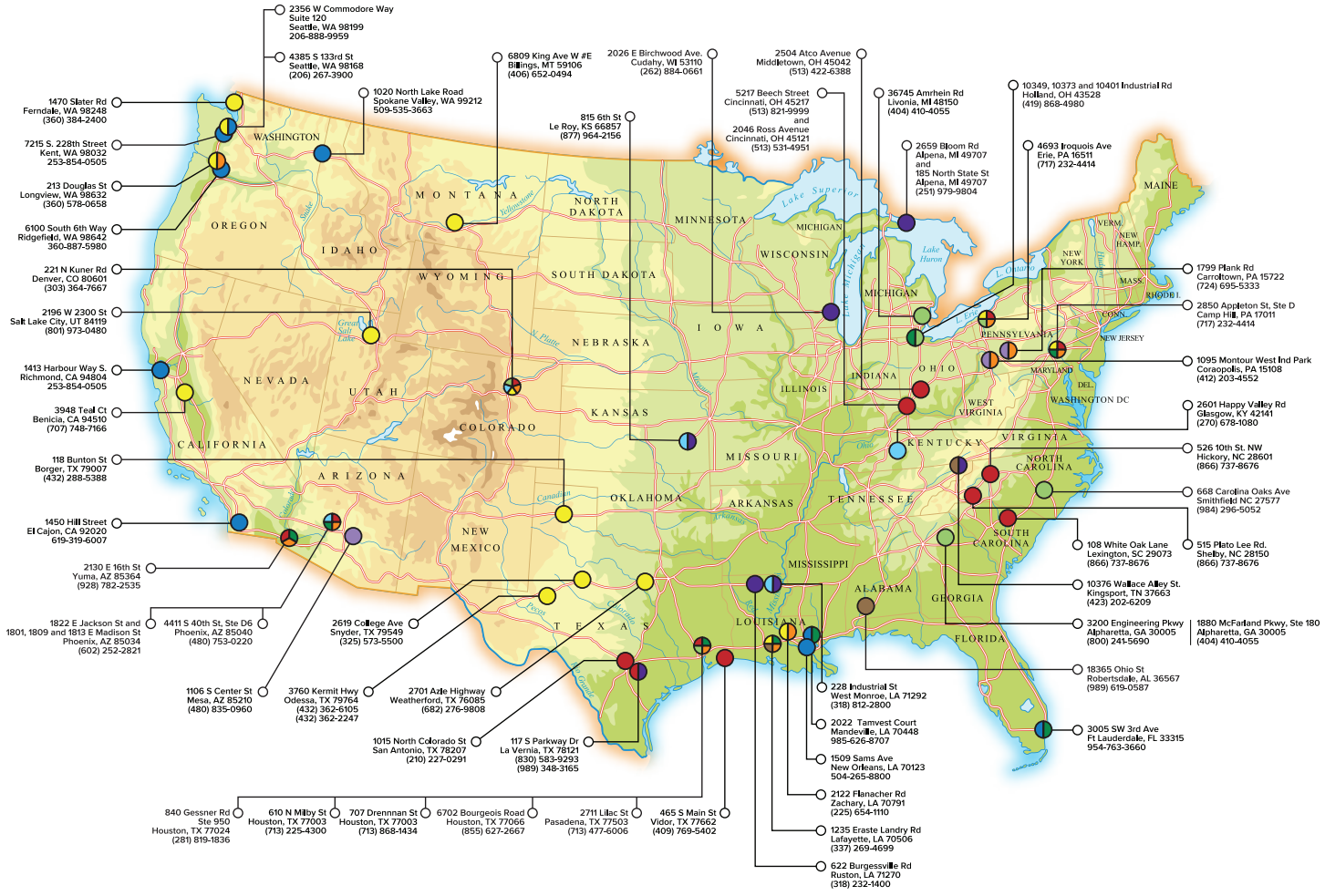
Electronic Units for Flow Meter Devices

- BEM electronic units are matched to KRAL flow meters and their applications and can be installed in the engine room or in remote locations. They display the measured fuel consumption in addition to the values recorded at each meter. Special PC software (BEM1000) can be used to capture and analyze the data over Modbus interface.

MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS), provides troubleshooting and support for the life cycle of your system including recalibration and maintenance to ensure precise measuring and technical functionality.

E-mail **sales@mshs.com** to discuss the benefits of a KRAL FCM system for your application.

Local Expertise. Nationwide Reach.



Houston:
840 Gessner Road, Suite 950
Houston, TX 77024

Mandeville:
2022 Tamvest Ct
Mandeville, LA 70448

Kent:
7215 S 228th St
Kent, WA 98032

Fort Lauderdale:
3005 SW 3rd Ave
Fort Lauderdale, FL 33315

Download

Contact Us!

MSHS
Pacific Power Group
An Industrial Service Solutions® Company

954-763-3660

mshs.pacificpowergroup.com

© 2026 MSHS Pacific Power Group (PPG), an Industrial Service Solutions® Company (ISS). All Rights Reserved.